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ABSTRACT

In this concluding volume of a nine-volume study of the impact of school finance reform on the poor and minorities, the author summarizes the project's methods, variables, findings, and conclusions about reform in the six states of California, Colorado, Florida, Michigan, New Mexico, and Texas. He first discusses the two general approaches to finance reform--social equity (equalizing expenditures) and fiscal neutrality (equalizing fiscal opportunities). The variables studied include educational resources, district wealth, tax effort, income, ethnicity, and urban location. These were analyzed at the district level and the school level (in Florida only) using correlations, percentiles, and measures of central tendency. Among the findings are that finance reform slightly decreased spending disparities and wealth discrimination, slightly increased fiscal neutrality, and made little change in revenues for poor and minority students. In Florida the study found greater spending disparities and ethnic concentrations at the school level than at the district level. The author concludes that finance reforms caused only slight improvements in social equity or fiscal neutrality and that reforms aimed at wealth neutrality will not necessarily benefit poor and minority students because such students are not always concentrated in low-wealth districts. (Author/RW)

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MINORITIES, THE POOR AND SCHOOL FINANCE REFORM

VOL. 5: SUMMARY AND CONCLUSIONS

Robert Brischetto

A Report Submitted to the National Institute of Education
U.S. Department of Health, Education and Welfare
Contract No. 400-78-0136

JULY 1979

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IDRA
INTERCULTURAL DEVELOPMENT RESEARCH ASSOCIATION

MINORITIES, THE POOR AND SCHOOL FINANCE REFORM

Robert Brischetto, General Editor

VOLUMES

1. An Impact Study of Six States
   Robert Brischetto and David Vaughan
2. The Impact of Texas' 1975 School Finance Reform on Poor and Minority Children
   Robert Brischetto
3. The Impact of California's 1972 School Finance Reform on Poor and Minority Children
   Robert Singleton, Joseph O. Garcia and Ruben W. Espinosa
4. The Impact of Florida's 1973 School Finance Reform on Poor and Minority Children
   David Vaughan
5. The Impact of New Mexico's 1974 School Finance Reform on Poor and Minority Children
   David Vaughan with the assistance of Elizabeth Vaughan
6. The Impact of Colorado's 1973 School Finance Reform on Poor and Minority Children
   Renee Marie Montoya and Gale G. Whiteneck
7. Statistical Note on a New Case for Discrimination in Texas School Finance
   Robert Brischetto
8. A History of School Finance Reform Litigation and the Interests of Urban, Poor and Minority Children
   Paul R. Dimond
9. Summary and Conclusions
   Robert Brischetto

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VOL. 9: SUMMARY AND CONCLUSIONS

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JULY, 1979

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PREFACE

The Intercultural Development Research Association (IDRA) with support from the National Institute of Education (Contract No. 400-76-0136) undertook a study of the impact of recent school finance reforms on poor and minority students in six states--California, Colorado, Florida, Michigan, New Mexico and Texas. The objective of the study was to track the distribution of dollars for education among districts with pupils of different ethnic and income groups from before to after "reform" legislation was implemented. The ultimate goal of this research was to inform policy makers on the state and federal levels about whether and to what extent legislative reforms of the first half of the 1970s have redistributed education resources in a manner which is more equitable for poor and minority students so that future policies might be measured by such a standard of equity.

The research, while sponsored by IDRA of San Antonio, was a cooperative effort with several school finance study projects originated by the National Urban Coalition (NUC) of Washington, D.C., Robert Bothwell, former director of the Education Finance Division of NUC, proposed this cooperative research effort. Renee Marie Montoya and Gale Whitenack of the Colorado School Finance Project of the Chicano Education Project in Denver, Colorado conducted the research on Colorado. The research in California was performed by Bob Singleton of the Education Reform Project of Los Angeles and Joseph Garcia and Ruben Espinosa of the California School Finance Reform Project at

San Diego State University. The purpose of the joint research effort was not only to study the impact of school finance reforms on poor and minority pupils, but also to obtain the data and develop the statistical tools necessary to continue to monitor school finance legislation in these states well beyond the termination of this study.

The findings of the study are reported in nine volumes. This report (Volume 9) summarizes the findings and conclusions from our six-state study.

The main report, comparing the findings across states, is presented in Volume 1: An Impact Study of Six States.

Volumes 2-6 are individual state reports on Texas, California, Florida, New Mexico and Colorado, respectively. Each report gives an historical overview of school finance legislation, a detailed description of the reform, and an in-depth analysis of the outcomes of the school finance system before and after the reform was implemented.

Volume 7: A Statistical Note on a New Case for Discrimination in Texas School Finance presents the type of statistical analysis which might be employed in court to prove discrimination against poor and minority children in Education.

Volume 8: A History of School Finance Litigation and the Interests of Urban, Poor and Minority Children provides an overview of school finance reform litigation in the context of other educational reform litigation efforts in behalf of poor and minority children.

Robert Brischetto
Study Director
July, 1979

INTRODUCTION

In the wake of Serrano and its progeny, school finance reforms were passed in half of the states since 1972. While much has been written on the form of the reforms in these states, the empirical research examining the actual effects of the reforms across states has only begun and there is a dearth of research exploring the impact of the reforms on poor and minority children. This study attempts to fill this information gap by tracking the distribution of educational resources among pupil groups in six states--California, Colorado, Florida, Michigan, New Mexico and Texas--from before the reforms were enacted to the present.

Our research was primarily designed to ascertain how local, state and federal resources available to poor and minority students compare with those available to other students and the extent to which the distribution of resources among pupils of different ethnic and income groups has changed with passage of reform legislation in each of the six states. On the way to answering those questions, we also gathered information on four related issues: changes in the degree of inequality in revenues and expenditures overall; wealth discrimination as affected by the reforms; the extent to which ethnic and income groups are isolated by school district boundaries; and the difference between school-level and district-level data in one of the states, Florida. Ultimately, our concern was to identify the impact of alternative types of financing arrangements and legal strategies on poor and minority students.

CHARACTERIZING THE REFORMS

The school finance reforms of the 1970s cannot be characterized by a single philosophy or approach to achieving equity. Indeed, the variety of formulas adopted reflect the results of political compromises and different opinions as to what constitutes an equitable distribution of educational resources.[1] One should recall that most of the inequities found in the "typical" pre-reform foundation program with local enrichment atop it stem from the disparities in taxable wealth among districts in the state. There are basically two different approaches to reform which emerge from the multitude of formulas enacted in response to this wealth discrimination: the "social equity" and "fiscal neutrality" solutions.[2]

The Social Equity Approach

The "social equity" approach to reform is based on the principle that there should be an equal distribution of educational resources per pupil (or unit of need) throughout the state. Thus, the State government sets the level of expenditure at which all districts are to be equalized. This can be achieved by means of either a flat grant where taxes are levied and revenues are distributed by the State or a foundation program of some sort in which the responsibility for collection of taxes is shifted to local districts. The social equity approach in its purest form is sometimes referred to in the school finance literature as "full state funding" of education. Hawaii is the only state with complete full state funding, but then there is only one school district in that state.

In our sample, New Mexico came closest to enacting a full state funding system. The flat grant formula was replaced by a foundation program with a real fixed local tax levy but with no provision for recapturing local revenues raised above the foundation level. The State then makes up the deficit in revenue raised by the local tax levy. The system of revenue distribution is based on a comprehensive set of pupil weights.

A somewhat similar approach to reform was adopted in Florida. Florida maintained a foundation program but did a major overhaul by introducing a more stringent local tax limit, a comprehensive set of 26 different pupil program weights, and a cost of living adjustment.

California and Texas elected to raise the level of their foundation programs. Revenue limits were set in California under SB90,[3] but these limits could be exceeded by a locally voted overide. In Texas, no limits were placed on local enrichment.

The Fiscal Neutrality Approach

The "fiscal neutrality" approach to reform is designed to equalize fiscal opportunities rather than educational expenditures and thus is concerned with taxpayer equity rather than pupil equity. It is based on the idea that if districts of varying tax bases apply the same tax rate, they should obtain the same level of expenditure per pupil (or unit of need). The various forms this approach to equalizing fiscal capacity has taken include district power equalizing, percentage equalizing, and guaranteed tax base formulas, all of which are mathemati-

cally equivalent.[4]

Michigan came closest to enacting a guaranteed tax base (GTB) formula in its reform. An upper limit was set on the amount of mills that would be equalized with state aid, although districts are free to levy additional local taxes.

Colorado also enacted a GTB formula with an authorized revenue base equal to the spending level of the district in the year prior to the reform plus a percentage increase based on a graduated scale permitting low-spending districts to increase more than high-spending ones.

Social Equity or Fiscal Neutrality or Both?

While both the social equity and fiscal neutrality approaches achieve wealth neutrality in one sense by eliminating the causal link between district taxable wealth and expenditures, the two are very different both philosophically and in their actual effects. The social equity solution approaches equity from the expenditure side of the school finance coin; the fiscal neutrality solution attempts to achieve equity in the potential for raising revenue for education by creating in effect a common tax base across the state. Thus, while the former insures equality of fiscal results or pupil equity, the latter insures equality of fiscal opportunity or taxpayer equity.

While a system which is fully state funded according to the principle of social equity would also be fiscally neutral, a fiscally neutral system will not likely result in equalization of expenditures. A fiscal neutrality solution would allow--even encourage--differences in tax effort at the local level, result-

ing in differences in spending. Only if the same effort were made by all districts--a highly unlikely circumstance--would equal expenditures result. Usually, districts for various reasons elect to expend different amounts of tax effort on education and thus, under a fiscally neutral reform, will receive different amounts of state aid and have different levels of expenditure. While this may achieve taxpayer equity in the sense of equalization of fiscal capacity, it does not address the problem of pupil equity.

Of course, in spite of their differences, the two approaches might be combined. For example, the state may equalize districts up to a given level of expenditure and then allow an equalized local option atop it dependent on how much tax effort a district is willing to expend beyond the state foundation level. The possible hybrids and combinations are numerous and shall not be discussed here.

Using the distinction between social equity and fiscal neutrality, three classifications of the types of systems included in our study are offered:[5]

I. The Social Equity Approach

   A. High-Level Foundation with Comprehensive Pupil Weights and Local Tax Limits
      1. Fixed local tax and thus full state funding: New Mexico
      2. Some local tax leeway: Florida

   B. Foundation Program with Elevated Foundation Level and Little or No Tax Limits
      1. Some limits to local revenue increases: California
      2. No limits to local revenue increases: Texas

II. The Fiscal Neutrality Approach:

A. Guaranteed Tax Base
   1. GTB with some limit to local revenue increases: Colorado
   2. GTB with no limit to local revenue increases: Michigan

B. Other Power Equalizing Formulas: No states included in the study.

Reform Models vs. the Reality

The problem with any ideal-type classificatory scheme is that it does not actually fit the reality. An actual funding system, after passing through the legislative process with all of the adjustments, add-ons, and save-harmless clauses, never fully resembles any one of the types in the classification. Let us examine more closely the reforms in the six states selected for this study in light of their deviations from the model type reforms.

Social equity is most closely approximated in the New Mexico reform where there is effectively full state funding in the form of a foundation program with a fixed local tax levy. The Florida reform, however, allows some local discretion in choosing the local tax levy within a narrow range.[6] Both states make adjustments for special factors in a manner which favors some types of districts over others. In New Mexico, we suspect the teacher education and experience adjustment may have favored wealthy districts which used their pre-reform spending advantage to pay high salaries to attract teachers with better educational credentials. In Florida, the cost-of-living adjustment favored urban districts where market values, incomes and living costs

were found to be higher.

California attempted to equalize spending in its 1972 reform by increasing the foundation level at which the state would equalize and by placing limits on the amount of increase allowed in expenditures. The revenue limits, however, could be exceeded by a local election and many districts elected to do so. The foundation level was also increased in Texas, but no limits were placed on the amount of local revenue a district can raise. It was the continued reliance on unequalized local enrichment which ruled out the possibility of the reform eliminating wealth discrimination. Flat grants were maintained as part of state funding in both Texas and California. While the flat grants are counted as part of foundation state aid, even those districts not eligible for foundation support receive the flat grant. In effect, the unequalized flat grants diminish the equalizing impact of the foundation formula.

Colorado also enacted limits on the increase in spending to accompany its guaranteed tax base system designed to achieve fiscal neutrality. The spending limits, however, were set according to expenditures during the year prior to enactment and thus tended to perpetuate the pre-reform inequities. Additional monies were effectively earmarked for Denver school district, a large urban district above average in property wealth.

In Michigan, a special provision for districts with excessive non-education tax burdens (municipal overburden) channeled additional funds to Detroit and other large cities, most of which are above average in wealth and spending.

The various adjustments to the basic aid formula have the effect of obfuscating the actual impact of a particular type of reform. In fact, the differences in reforms among the states are so great as to make it impossible to generalize from these states to others. Thus, we do not attempt to make such an inferential leap but instead limit the conclusion to the six states included in the study.

Funding Pupil Needs

Both basic approaches to eliminating wealth discrimination assume that revenues for education are distributed per unit of need. In addition to setting forth a wealth-equalization formula, a reform which is equitable will take into consideration differences in pupil needs in its distribution of state aid. Two methods of doing this are by categorical aid which is earmarked for districts or schools with disproportionate numbers of pupils with special needs or by assigning different weights to pupils with different needs and funding according to units of need.

Unfortunately, there is no agreement yet among states as to what standards of need should be applied. Florida enacted the most elaborate set of pupil weights by defining 26 different programs for classifying pupils. Even so, minority, poor and linguistically different pupils were taken into consideration in this weighted pupil scheme only to the extent that they happen to fit into traditional categories of mentally and physically handicapping conditions. New Mexico enacted a different weighted pupil scheme for distributing funds, but the add-on weight for bilingual education was more a product of political compromise

than of pupil needs assessment. The other four states--California, Colorado, Michigan and Texas--enacted categorical programs of one kind or another, but with considerable variation in the criteria and amounts for "compensatory education." In Texas, the principle of providing compensatory funding for the "educationally disadvantaged" in addition to allocations for special education programs was introduced for the first time. However, the $40 allowed for each ESEA Title I pupil was reduced to keep within the $25.4 million allocated for the program. California, by contrast, allocated considerably more compensatory aid for districts with concentrations of Title I pupils. Aid under the Educationally Disadvantaged Youths (EDY) program amounted to $128 per Title I pupil in 1975-76 times a combined three-factor index based on the district's disproportionate concentration of pupils with language differences, percent below proverty and transience.[8] The EDY allocation was in addition to special assistance to urban districts totalling $82 million and early childhood education aid of $25 million.

Conceivably, a state might take into consideration any number of factors in determining the levels of need among districts or schools. These factors might be based on grade differences, transportation costs, curriculum differences, experimentation and innovation costs, pupil achievement level, diseconomies and economies of scale, differences in language and culture, desegregation assistance and a host of other special needs which might be considered as legitimate criteria for allocating educational resources. While the reforms in some of

the state incorporated some of these factors, there was clearly a lack of consistency in the manner in which the legislatures responded to pupil needs.

In our research, we made no a priori assumptions about the various needs of different pupil groups, but only examined educational revenues to determine empirically the nature of their distribution among ethnic and income groups both before and after the reforms. The assumption apparently implied in the use of measures which do not take into account differences in pupil needs is that such differences do not exist. Such an assumption we know is not true, but until adequate measurement of pupil needs is accomplished, we can only speculate as to what an equitable distribution of revenues should look like. We suspect that minority children tend to have different and more costly educational needs than dominant group children and that the needs of children from poverty families tend to be greater than those from non-poor families. As such, in a system which distributes educational resources in an equitable manner (i.e., according to need), we would expect to find greater than average revenues available in districts with disproportionately large numbers of poor and minority children.

METHODOLOGY

Data were obtained on school districts in each of the six states selected for study. The data covered a period of at least one year before the state's reform through the most recent year for which data were available at the time the study

was begun. In addition, school-level data were obtained for 1975-76 in Florida, where school site budgeting was instituted after the reform. The years over which the district data spanned for the various states were as follows:

State	Year reform implemented	Years for which data were obtained
California	1973-74	1971-72 through 1975-76
Colorado	1974*	1973 through 1975
Florida	1973-74	1972-73 through 1975-76
Michigan	1973-74	1969-70 through 1974-75
New Mexico	1974-75	1972-73 through 1976-77
Texas	1975-76	1974-75 through 1975-76

*Calendar year instead of school year.

Data Items

Educational Resources. Our research was concerned chiefly with the distribution of educational revenues from local, state and federal sources. Revenues from all local and state sources combined indicate the financial resources provided under the state's school finance system and thus were the central focus of the analysis of revenue distribution before and after reform. In New Mexico, federal impact aid (PL874) is treated as local revenue under the state equalization formula and we treated it as such in our analyses. However, in the individual state reports, of this study, PL874 funds are treated both as local and federal funds in separate analyses in order to examine their impact. Expenditures by type (instructional, total operating, capital, etc.) were also of interest in the more detailed individual state reports in Volumes 2-6.

Wealth and Tax Effort. District tax base and rate were important data items for examining the question of wealth neutrality in funding. District property values and tax rates

were adjusted by the ratio of assessed values to sale price of property for each year these ratios were available in order to indicate the true market value and the equalized tax rate. While there is considerable debate among researchers about how property values should be expressed--per pupil or per capita--we employ the most common usage, equalized value per pupil in average daily membership (or attendance, depending on which was available both before and after reform).

Ethnicity and Poverty. District enrollment figures for ethnic and racial minorities and non-minority students were obtained on all districts in each state and on school campuses in Florida. Census data from 1970 by 1974-75 school district boundaries provided a count of the number of children from families with incomes below the federal poverty level (Orshansky Index) for each district with an enrollment of 300 pupils or more. (Districts with less than 300 pupils were excluded from the analyses involving census variables.)[9]

Community Type. The locale of a school district was indicated in two ways: (1) by calculating the percent of the district population in urban places (places of 2,500 population or more) and (2) by utilizing a breakdown of categories of community types (central city, suburban, small town, rural, etc.), which varied somewhat from one state to another according to the population distribution in the state. Urbanness and community type were employed as control variables in the more detailed analyses presented in Volumes 1-6.

Measures

The data items mentioned above are incorporated into a variety of measures of equality or equity.

Equality measures. Five indicators of the degree of inequality of educational resources were computed. These include the range, the federal range ratio, the variance and the coefficient of variation. For interestate comparisons, the coefficient of variation (standard deviation divided by the mean) was used to indicate changes in the degree of inequality of revenues. The other measures are reported in the individual state volumes (Volumes 2-6)

Equity Measures. Equity was operationally defined by measures of wealth discrimination and ethnic or poverty discrimination.

Wealth discrimination measures include (1) a quintile analysis comparing mean revenues among quintiles of pupils ranked by district equalized property valuation, (2) regression elasticities and Pearson correlations relating district equalized property values and revenues, and (3) partial correlations relating district property valuation to revenues after statistically controlling tax effort.

Ethnic discrimination measures (1) compare the mean revenue for pupils of a particular ethnic group with the state pupil mean, and (2) employ Pearson correlations relating revenue to ethnic composition of the district.

Proverty discrimination is operationalized in the same manner as ethnic discrimination. Poverty concentration is

indicated by the percent of children of school age in families with incomes below the official federal poverty level. In the individual state volumes, mean family income is also utilized to explore the income-revenue relationship.

Ethnic and Poverty Isolation Measures. If the various ethnic and income groups were evenly distributed among school districts, there would be no differences in funding among ethnic or income groups--at least not on the district level. Thus, prior to studying ethnic and poverty-related disparities in educational funding, we examined the extent of ethnic and poverty group isolation by school district boundaries. We viewed ethnic and poverty group isolation in terms of (1) the extent of group concentration into districts in which the group constitutes large percentages of the total enrollment and (2) the concentration of the group into districts with large numbers of group members.

Unit of Analysis

With the exception of Florida, the data were available only on the school district level of aggregation. However, our study is concerned with the impact of school finance systems on different pupil gropings, not on districts per se. Thus, the appropriate unit of analysis is the pupil. The necessary assumption is that all pupils in a given district are receiving the same amount of resources regardless of their race, ethnicity or family income. We tested the validity of this assumption with a school-level analysis of ethnic-related expenditure disparities in Florida.

SUMMARY OF FINDINGS

In this section, the research findings are presented in summary fashion. More detailed statistical tables and discussion appear in the main report on all six states in Volume 1 and the individual state reports in Volumes 2-6.

Adequacy: Level of Support

One of the important goals of the reforms of the seventies was to provide adequate funding for education overall. Ideally, "adequacy" should be measured by the extent to which the educational resources and services provided are appropriate to students' needs. Unfortunately, we had no good indicators linking the level of educational resources or services with the amount of dollars for education. Instead, we examined only the amount of dollars available and found that:

- The reforms increased the amount of revenue available for education in each of the six states.
- Reforms generally increased the state share of total revenue for education.
- Reforms provided local tax relief in half of the states and increased local taxes in the other half.

A simple indicator of the level of support for education is the amount of revenue per pupil available from local and state sources. Column 1 of Table 1 shows the extent to which the reforms have increased the level of support for education from the year before each reform to the second year following the reform.[10] The amount of change in level of funding ranges

from a 41 percent increase in Florida to a 20 percent increase in California unified districts. When compared to increments of increase in revenues prior to the reforms, the changes in the reform states were found to be comparatively large.

TABLE 1. TWO-YEAR IMPACT OF SCHOOL FINANCE REFORMS IN SIX STATES

STATE BY TYPE OF REFORM	Adequacy: L+S Revenue Per ADA (ADA)	State Share: Pct. State of Total Rev.	Tax Burden: Total Equalized Tax Rate***	Revenue Disparity: C.V. of L+S Revenue	Tax Disparity: C.V. of Total Eq. Tax Rate	Simple Wealth Discrimination: L+S Rev., High/Low wealth pupil quintiles	Conditional Wealth Discrimination: Pct. of variance in L+S Rev explained by wealth, controlling for tax rate.	Ethnic Group Disparity: Pct. State Mean L+S Revenue; Group Mean/ Blacks ****	Hispanics	Poor	Ethnic Concentration Disparity: High percent ethnic quintile mean/ state mean L+S Revenue; Blacks	Hispanics	Poor
Conventional Foundation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
California Unified													
Before Reform (72-73)	$1,006	31%	45.1	.186	.171	1.43	77%	1.08	.98	1.01	1.12	1.02	1.02
After Reform (74-75)	1,207	41	42.4	.145	.147	1.31	74	1.06	.99	1.01	1.07	.99	1.01
Change*	(+20%)	(+10)	(- 6%)	(-22%)	(-14%)	(-.12)	(- 3)	(-.02)	(+.01)	(0)	(-.05)	(-.03)	(-.01)
California Elementary													
Before Reform (72-73)	842	36	28.8	.240	.232	1.46	66	1.02	.96	.96	.99	.96	.91
After Reform (74-75)	1,080	45	25.3	.180	.170	1.34	55	1.02	.98	.98	1.00	.98	.95
Change	(+28%)	(+ 9)	(-12%)	(-25%)	(-26%)	(-.12)	(-11)	(0)	(+.02)	(+.02)	(+.01)	(+.02)	(+.04)
Texas**													
Before Reform (74-75)	1,029	45	9.0	.245	.257	1.68	41	.99	.91	.90	1.03	.84	.89
After Reform (75-76)	1,232	48	10.1	.225	.249	1.50	31	1.02	.93	.96	1.05	.88	.91
Change	(+20%)	(+ 3)	(+12%)	(- 8%)	(- 3%)	(-.18)	(-10)	(+.03)	(+.02)	(+.06)	(+.02)	(+.14)	(+.02)
Weighted Pupil Foundation													
Florida													
Before Reform (72-73)	954	55	7.7	.088	.127	1.23	58	1.00	1.05	.99	1.00		.96
After Reform (74-75)	1,344	55	6.1	.086	.079	1.15	53	1.00	1.07	.99	.99		.95
Change	(+41%)	(0)	(-21%)	(- 2%)	(-38%)	(-.08)	(- 5)	(0)	(+.02)	(0)	(-.01)		(-.01)
New Mexico								Ind.					
Before Reform (73-74)	840	69	7.0	.181	.322	1.12	12	1.13	.98	1.02		1.05	1.16
After Reform (75-76)	1,070	71	11.2	.138	.270	1.12	14	1.02	1.00	1.01		1.03	1.06
Change	(+27%)	(+ 2)	(+60%)	(-24%)	(-16%)	(0)	(+ 2)	(-.11)	(+.02)	(-.01)		(-.02)	(-.10)
Guaranteed Tax Base													
Michigan													
Before Reform (72-73)	945	43	24.1	.154	.198	1.29	61	.96		1.08	.93		.90
After Reform (74-75)	1,186	40	26.5	.132	.178	1.24	53	1.03		.99	1.03		.99
Change	(+26%)	(- 3)	(+10%)	(-14%)	(-10%)	(-.05)	(- 8)	(+.07)		(-.09)	(+.10)		(+.09)
Colorado													
Before Reform(1973)	1,010	33	35.9	.186	.201	1.49	59	1.12	.99	1.01	1.12	.96	1.13
After Reform(1975)	1,316	48	29.3	.191	.290	1.36	64	1.18	1.01	1.03	1.22	.88	1.20
Change	(+30%)	(+15)	(-18%)	(+ 3%)	(+44%)	(-.13)	(+ 5)	(+.06)	(+.02)	(+.02)	(+.10)	(-.08)	(+.07)

* "Change" refers to percent change if "%" is included; otherwise, it is simply the difference of the value before minus the value after the reform.

** The period of time from before to after the reform in Texas is one year; all other states have a two-year period for pupose of comparison.

*** Tax rates are equalized across districts within each state, but assessment levels differ among states and, thus, tax rates cannot be compared across states.

**** Indian is substituted for Black in New Mexico since Blacks make up fewer than 2.5% of the total pupil enrollment in that state.

Historically, the trend in the states has been toward an increase in the proportion of funding for education from state sources. In 1967-68, just prior to the wave of court challenges of state funding systems, the state share of the education dollar was 38 percent for the nation as a whole; by 1975-76 the proportion of all revenue for education in the country from state sources had increased to 44 percent. The reforms in the six states we studied followed this trend, although to varying degrees. In the year prior to reform, from 31 to 69 percent of all revenue for education was state funding. Two years following the reforms, the state share ranged from 40 percent to 71 percent. (Table 1, Column 2). The largest increases in state share occurred in Colorado and California; no increases were found in Florida and Michigan.

New Mexico remained the state closest to a full state funding system with 71 percent of all revenues coming directly from the state. It is worth noting that the two states with the greatest proportions of revenue from state sources--New Mexico and Florida--have high-level foundation programs with strict local tax limits and a comprehensive weighted pupil approach to distributing revenues.

Increases in state support for education have generally resulted in a relative decrease in the local property tax as a source of revenue. The reforms led to local property tax relief in four of the seven cases in our study. (Table 1, Column 3). While tax relief occurred following the reforms in California unified and elementary districts, Florida, and

Colorado, tax rate increases occurred in Michigan, New Mexico, and Texas. Apparently, while increased spending meant increased state revenues in all states, it also meant increased local revenues in some of the states in our study.

Spending and Taxing Disparities

While spending equality does not necessarily translate into equity for pupils, one of the goals of many of the reforms enacted during the seventies was to reduce the degree of disparity in expenditures overall. Another aim was to reduce the degree of inequality in tax effort. Applying one measure of dispersion, the coefficient of variation, we found with regard to the six states in our study that:

- Spending disparities were generally reduced, but only very little, in the first few years following reforms.
- Reforms generally resulted in more equal distribution of the tax burden.

Some decline in revenue disparities resulted after two years in each state except Colorado. (Table 1, Column 4). In Colorado, while the amount of inequality in revenues declined initially during the first year following the reform, the disparity increased in the second year after the reform. This may be due to the fact that while the revenue limits served to check spending initially, the limits were based on the pre-reform level of spending and thus provided the basis for perpetuating the same disparities in the future as further increases were allowed.

Tax rate disparities were reduced following reforms in six of the seven cases studied. (Table 1, Column 5). Only in Colorado did total effective tax rates become more unequal. In other other states, both spending disparities and taxing disparities were found to decrease following the reform.

Wealth-Related Disparities

For some time school finance reformers have been concerned with eliminating the invidious relationship between district wealth and spending. This has most frequently been expressed as a concern for "fiscal neutrality," the notion that the expenditures for education should not be a function of wealth other than the wealth of the state as a whole.[11] Our study examined two definitions of fiscal neutrality, both concerned with equalizing the ability to raise money for education. Simple neutrality is defined as the absence of a direct relationship between district property wealth and the level of revenue available for education from local and state sources. This notion ignores the source of the correlation between wealth and expenditures and attacks the relationship itself. Conditional neutrality is defined as the absence of a direct relationship between district property wealth and revenue level after statistically removing the effect of tax effort. This concept of fiscal neutrality suggests that the ability to raise revenue for education should be equalized, but any revenue disparity resulting from differing local tax effort is justified.

We used several techniques for measuring the direct relationship between property valuation and revenue level or spend-

ing: Pearson correlation coefficients, elasticities, and mean revenue for quintiles of pupils ranked by district property valuation per pupil. All of the indicators point to the fact that:

- The reforms generally reduced the relationship between property valuation and revenue level (or spending), but the changes were not enough to achieve simple fiscal neutrality, and large wealth-related disparities remain in all of the cases studied except New Mexico.

Table 1, column 6, shows the ratio of the mean revenue level per pupil for the property-wealthiest quintile compared to the property-poorest quintile of pupils. The greatest decline in wealth-related disparities according to this measure occurred in Texas after the reform. Even so, the amount of wealth-related inequality in revenues was greater in Texas after the reform than any of the other states prior to reform. Declines in wealth-related disparities were found in the other reform states with the exception of New Mexico, where wealth discrimination was very low before the reform and no appreciable change occurred as a result of the reform. The greatest gaps in revenues between rich and poor districts were found both before and after the reforms in Texas and California--the states with conventional foundation programs; the least amount of disparities between rich and poor districts were found in Florida and New Mexico--states with comprehensive pupil weights and de facto full state funding.

Conditional neutrality was defined in our study as the absence of a partial correlation between property wealth and revenues (or spending), when statistically controlling tax rate. These partial correlations are then squared to indicate the amount of variation in revenues which can be accounted for by property wealth after removing the effects of tax effort. (Table 1, Column 7).

- Even after removing the effects of differing tax effort, the reforms generally reduced the relationship between property wealth and revenue level.
- A large portion of the inequality in revenues after the reforms is wealth-related and independent of tax effort in every state studied except New Mexico.

Disparities in revenues were less a function of wealth after than before the reforms in five of the seven cases studied. Only in New Mexico and Colorado, were trends toward greater conditional neutrality not evident. The least amount of conditional neutrality after reform was found in California; the greatest amount was found in New Mexico.

In short, fiscal neutrality--in both the simple and conditional senses--is far from becoming a reality in five of the six states studied, although the reforms in these states had some impact in reducing the amount of wealth discrimination.

Minority and Poverty Group Isolation

One of the most important methodological observations made in this study is that the ability to identify intergroup disparities

in funding is determined to a large extent by the nature of the distribution of minority and poverty groups in the state. Thus, prior to examining the distribution of revenues among different pupil groups, we studied the isolation of minority and poverty groups by school districts in each state and by schools as well in Florida.

When examining district level data, we found two forms of ethnic or poverty group isolation. One pattern exists where a large proportion of all students of a particular minority group are concentrated into only a few school districts in which they constitute only a small percentage of the total district enrollment. For example, two-thirds of all Black students in Colorado are found in Denver school district where they constitute only one-fifth of the total student enrollment. Likewise, some 70 percent of all Hispanic pupils in Florida are located in one district, Dade County, where they are 30 percent of the district's total enrollment. Isolation of this sort does not enable the analyst to separate out a minority or poverty group from other students when examining finance data by percent ethnic or poverty enrollment. We thus relied on an alternative approach of calculating statewide means for the various ethnic (or income) groups by weighting the finance data in each district by the particular group's enrollment. We also conducted school-level analyses within Florida school districts relating school site budget data to percent ethnic group enrollment in the schools.

The second pattern of ethnic isolation is most ideal for conducting intergroup disparity analyses. This is the kind where a large proportion of the members of a particular minority or poverty group are concentrated in districts wherein they constitute large percentages of the total district enrollment. Native American students in New Mexico, Chicano students in Texas and New Mexico and Black pupils in Michigan fit this pattern. This type of isolation was not found among pupils from poverty families. The analysis of school finance data by a minority group's percentage of the total enrollment is particularly meaningful if this type of ethnic isolation exists.

Of course, if neither type of group isolation is found by school district boundaries, then conclusions cannot be drawn concerning the disparities among ethnic and income groups using district-level data. We would then have to either settle for observations concerning a subset of districts with high percentage minority enrollments but with only a small proportion of the minority group's total enrollment in the state, or abondon the district level data altogether and examine the ethnic group disparities among school sites. We reported the results of school-level analyses in Florida in Chapter 4 of Volume 1 as an example of how these analyses might be conducted were data available in other states.

Minority and Poverty-Related Disparities

The above mentioned limitations of district-level data must be kept in mind when examining the findings on group differences

in educational resources. Our first method of presenting ethnic and income group differences involves computing statewide average revenue for each ethnic and income group. (Table 1, Columns 8-10)[12] We found that:

- Before the reforms, Blacks were generally slightly above average in revenues for education, whereas Mexican Americans were below average. Pupils of Cuban descent in Florida and Native Americans in New Mexico were in districts receiving more revenues than the average pupil in their states. Pupils from poverty families were above average in half the cases and below average in half.
- The reforms did very little to change the relative position of most of the groups studied. Clearly, however, Blacks benefitted from the reforms in Michigan and Colorado and Native Americans lost their relative advantage in New Mexico. Poverty pupils gained some in Texas and lost in Michigan.

Before the reform in each of the four southwestern states, Mexican American pupils were worse off than the average pupil. The reforms tended to improve the position of these pupils, but generally not up to the average. Mexican American pupils in Texas were found to be the most relatively disadvantaged of all ethnic groups with respect to educational revenues both before and after the reform. American Indian pupils in New Mexico were the most advantaged group before reform, if federal impact aid is counted as local

revenue. Indian pupils, however, lost their revenue advantage after the reform, probably since state equalization aid was distributed essentially in inverse proportion to the amount of local revenue raised and federal impact aid was for the first time under the new law treated as local revenue.

In half of the states (including Michigan), Blacks benefitted from the reform. In the others, Blacks remained about the same as before or lost ground. In all cases, however, Blacks were better off than the average pupil after the reform. The increases in revenues available to Black pupils in Michigan and Colorado are due to the additional revenues received by Detroit and Denver provided through special provisions in the reform legislation favoring these urban centers. It must be remembered, however, that the average dollar amounts shown are not adjusted for the higher costs and needs which are generally believed to exist in central cities.[13] Thus, the fact that Blacks are receiving more than average revenues in the state should be interpreted in light of the higher costs of education in urban centers where they are found in large numbers.

The pattern of change in revenues available to poor children was not an altogether consistent one. While poverty pupils on the whole fared better than the average pupil in Texas, they were worse off in Michigan as a result of reform. In the other states, no sizeable changes occurred for poverty students as a group.

In the second approach to analyzing ethnic and income group differences, we examined the relationship between reve-

nues and the percent ethnic or poverty concentration in the district. The findings using this method generally corroborated the findings of the group means analysis except that, wherever disparities were found, they were more dramatic. (Table 1, Cols. 11-13).

- Considerable differences were found among ethnic groups before each reform:
  - Districts with high concentrations of Black pupils were at or above average in revenues before the reforms.
  - Districts with high percent Chicano pupils were at or below average in revenues prior to reforms.
  - Districts with high concentrations of pupils from poverty families were below average in some cases and above average in others before reforms.
- In general, little change in the distribution of revenues among districts of different ethnic and poverty concentration occurred generally as a result of reforms.

Although no consistent pattern of change was found across states as a result of the reforms, there were a few noticeable changes for some groups in some of the states. Districts with high concentrations of Black pupils lost their relative revenue advantage in California unified districts and improved their relative advantage in Colorado. Districts with high Chicano pupil concentrations in Colorado, mostly small town or rural districts, became even more disadvantaged with respect to revenues; but in Texas, districts with high Chicano concentrations

improved their very disadvantaged position. Districts with high percent poverty concentrations improved relative to the average in California elementary districts, Colorado and Michigan but lost in Florida and New Mexico.

The Relative Impact of Federal Aid

The results summarized above have dealt for the most part only with revenues from local and state sources combined. Since federal aid is usually earmarked for special programs in districts with concentrations of educationally disadvantaged pupils, we felt that federal funds should be examined separately. Combining federal funds with state and local revenue would only distort the picture of how a state system of funding education was distributing its resources. The question, however, of the equalizing impact of federal aid when combined with local and state funds is at least of academic interest if not a policy issue. The individual state reports (Volumes 2-6) show the distribution of federal revenues by district wealth and percent ethnic and poverty group enrollment and the main report (Volume 1) examines the relationship between these district characteristics and revenues before and after adding federal revenues.

Since federal aid consititutes only 4 to 10 percent of all educational revenues, we did not expect much impact on the distribution of revenues overall. We found that:

- Federal revenues have a very small but noticeable wealth equalizing influence in five of the seven cases studied. State revenues had a much greater wealth equalizing effect than did federal revenue.

. Federal revenues are distributed in a manner that benefits districts with concentrations of Black, Spanish-surname and poverty pupils. Generally, but with some important exceptions, the distribution of federal revenues is more favorable to districts with high percentages of minority and poor students than is state revenue.

The exception to the general rule that federal aid benefits minorities more than state aid is found in New Mexico. State aid in New Mexico constitutes the lion's share of all educational revenues and is distributed in a manner which benefits districts with high concentrations of Hispanic pupils more than does federal aid of any kind. However, districts with high concentrations of poverty, especially in rural areas and on Indian reservations, lost their relative advantage with respect to state aid following reform. As mentioned previously, this may in part be attributed to the fact that federal impact aid was counted as local revenue in the new state equalization formula.

Explaining Minority and Poverty-Related Inequalities

We examined the extent to which the relationships found between percent minority (or poverty) enrollment and revenue level could be accounted for by district property wealth and urban-rural locale. We found that:

- Usually, where a relationship existed between percent minority group or poverty enrollment and revenue level, most of that relationship could be explained by variations in district property wealth.

For example, the revenue advantage experienced by districts with high percentages of Black pupils in California Unified districts can be explained by the relative wealth of those districts. By the same token, the revenue disadvantage of California elementary districts with high proportions of Chicano pupils can be accounted for by the fact that those districts are also relatively property poor.

. In some cases, percent urban was a better explanation for the relationship between percent minority or poverty group enrollment and revenue level.

New Mexico is a case in point. The fact that districts with higher incidence of poverty tend to have greater amounts of revenue for education can be "explained" in part by their community locale. Or, for example, districts with higher proportions of Black students in Colorado experience a revenue advantage in part because of their urban locale (namely, Denver).

Not all of the ethnic-related variation in revenues can be explained by property wealth and percent urban. Further research might examine other factors that would explain, for example, the fact that in Texas districts with high concentrations of Chicano pupils are receiving less revenues, even when the effects of wealth and urbanity are removed. Could it be that the more experienced and highly trained teachers, who elicit greater state aid, avoid predominately Mexican districts simply because of their ethnic makeup? Teachers' qualifications and their choice of schools should be the subject of further research.

Relative Importance of Wealth, Effort and Need

How can we account for the variation in the amount of local-state revenue per pupil available for education? We examined the relative importance of district wealth, tax effort, and various indicators of greater educational needs. Due to the particular thrust of our research, educational needs indicators were narrowly defined as percent Black, percent Hispanic, mean family income and percent urban population. By examining the unique contribution of each of these factors in explaining variation in revenue, we were able to ascertain their relative importance in the system of financing education in a state. We found that:

- Property wealth was the most important factor accounting for revenue variation both before and after the reforms.
- The relative importance of property wealth declined somewhat after reform, although usually very slightly.

Thus, even after the reforms, we found that, on the average, the greater the property tax base of a student's district, the greater the amount of revenue available for that student's education. Wealth discrimination was still very prevalent in school finance after the reforms. New Mexico is the only exception to this finding. Very little of the variation in revenue can be uniquely attributed to wealth in New Mexico. Other factors, not included in the analyses, are apparently more important. Future research might examine the relative importance of certain need and cost factors or the amount of teacher education and experience.[14]

- Tax effort makes an important unique contribution in explaining the amount of variation in revenues in California, Colorado and Michigan.

The importance of tax rate in accounting for variation in local-state revenues was expected to increase in guaranteed tax base systems such as those in Colorado and Michigan. However, the amount of variation in revenue uniquely accounted for by tax rate was as great before as after the reforms in these states. Thus, the relative importance of tax effort cannot be attributed to the changes in the funding formulas made by the reforms.

- Each of the factors of exceptional educational needs--percent Black, percent Hispanic, mean income and percent urban--make little or no unique contribution toward explaining variation in revenue from local and state sources.

Had we included indicators of educational need more closely akin to the types of factors enacted in the funding systems of each of the states, we might have found such a model to have greater explanatory power. But this research had a different purpose; we were interested in the extent to which the ethnic, income or urban composition of a school district affected the distribution of educational revenues. Apparently, there is very little unique influence of each of these factors on the variation in revenues. A large amount of overlapping variance was found among the various factors, indicating that some of the exceptional needs factors in combination may account for additional variation in revenues. We urge further study of the interactions among the various needs factors in future research on school finance equity.

SCHOOL LEVEL ANALYSIS

Most school finance studies--including our own analyses presented above--have relied upon district-level data since school districts are ordinarily the administrative units for which budgets are reported and fiscal records kept. This is unfortunate for the analyst who wishes to comment on the distribution of educational revenues among student groups. Ideally, records of the allocation of educational resources to classrooms or individual pupils would provide the data needed for analysis of differences among pupils of different ethnic and income groups. While no classroom records are kept consistently throughout a state, school-level accounting data have become available for the first time on a statewide basis as a result of the 1973 reform in Florida. We used these school site budget data on all schools in Florida for 1975-76 to compare the results of school-level analyses with those conducted on the district level. Total educational expenditures per pupil was adopted as a measure of educational resources. Pupil counts by ethnic group (Black, Spanish-background, other minorities and Anglo) were obtained on school sites. These data were analyzed within each of eight groups of programs: K-3, 4-9, 10-12, Educable Mentally Retarded (EMR), Trainable Mentally Retarded (TMR), Physically Handicapped, Socially Handicapped, and Gifted.

Three main questions were addressed in our school-level analyses. First, we wanted to know to what extent variations in per pupil expenditures and ethnic concentration among schools are greater than variations among districts. Secondly, we wanted to know

if the relationship between ethnic concentration and expenditures at the school level is different from the same relationship on the district level. Thirdly, we wanted to find out the extent to which pupils of different ethnic groups are disproportionately represented in the various educational programs.

Inequalities in Expenditures and in Ethnic Isolation

Comparing expenditure disparities on the district and school levels, we found:

- Between 5 and 27 percent, depending on the program, of the total variance in expenditures among schools can be observed in district-level data.

This suggests that most of the inequality in educational expenditures which can be observed among Florida's schools is not revealed in a district-level analysis. Furthermore, very little of the variation in total expenditures among schools may be attributed to systematic differences among districts. Thus, if Florida's state school finance system is to achieve equalization of expenditures, it must reach below the district level and concentrate on disparities among schools.

It is not surprising that, just as expenditure inequalities are greater among schools than among districts, so too variation in percent ethnic concentration is much more pronounced on the school level than on the district level. We found that:

- Between 7 and 39 percent of the variance in percent Black enrollment among schools, depending on the program, is accounted for by inter-district variation.
- Depending on the program, between 37 and 65 percent of the variance in percent Hispanic pupil enrollment is due to variation among districts.

- Considerably more ethnic isolation exists among schools than among districts and among elementary than secondary schools.

This latter point is borne out by the fact that 10 percent of all Black elementary pupils in Florida are in districts of at least one-third Black enrollments but 50 percent of all Black pupils are in schools of one-third or more Black enrollments.

These findings have an important message for future researchers and reformers interested in the impact of legislation on different pupil groups. They indicate that much of the precision needed to isolate expenditure inequalities among pupil groupings is lost with district-level data. Since ethnic isolation is more pronounced on the school level than on the district level, it is on the school level that studies would best be conducted for identifying ethnic group differences in educational resources. Of course, considerable differences in the degree to which the ecological fallacy is committed will be found among states since states differ considerably in average district size and heterogeneity. Indeed, Florida may be atypical in this regard since school districts follow county boundaries.

Expenditures by Ethnic Concentration

In view of the precision lost in the jump from the school to the district level of analysis, we anticipated differences by level of analysis in the correlations between expenditures and per cent ethnic group enrollment.

- For the regular school programs (K-3, 4-9, 10-12), the statewide correlation between percent Black and expenditures is approximately zero on the district

level of analysis, but moderately positive on the school level of analysis.

- While a strong direct correlation between percent Hispanic pupil enrollment and total expenditures exists statewide on the district level of analysis, no significant correlation was found for the state as a whole on the school level.

Thus, the ecological fallacy[15] is clearly committed when correlations between expenditures and ethnic concentration on the district level in Florida are used to draw conclusions about the distribution of funds among ethnic groups. This signals the need for school-level analyses in conducting pupil equity research.

Student Sorting by Program

Funding 26 different educational programs is only half of Florida's weighted pupil approach to meeting varied pupil needs; the other half involves the sorting of student into the appropriate educational programs. The criteria and procedures for sorting students unexpectedly emerged as important considerations in our evaluations of the effect of the Florida reform as it became apparent that certain minority groups were overrepresented in some educational programs and underrepresented in others.[16] Our concern was based on the observation that, while students were ostensibly not sorted according to racial criteria, the effect of the sorting system may be to concentrate minority children in programs for the retarded and exclude them from the more advanced programs. We expected such dispro-

proportionate sorting to be greater for Blacks than for Spanish language pupils, since Black students are, on the average, from lower socioeconomic backgrounds and historically the object of greater discrimination than Cuban students.

Our predictions were generally true. For the state as a whole, we found that:

- Anglo pupils are underrepresented in the special education programs and overrepresented in the programs for the "gifted."
- Black pupils are overrepresented in special education programs, especially TMR and EMR programs, and underrepresented in programs for the gifted.
- Hispanic pupils are underrepresented in gifted programs and to some extent in EMR and socially disabled classes, but not in other special education.

While these findings are not unusual, we did not expect the degree of ethnic segregation by education programs to be so large. Anglo students in the state as a whole were placed in programs for the "gifted" in one third greater numbers than would be expected from their proportion of the state's total enrollment, yet in EMR programs they are only one half the expected proportion. By the same token, Black students in the state are in EMR programs at almost three times their expected numbers, yet in "gifted" programs in only one fourth the number which would be expected from random assignment. Spanish language pupils in Dade County school district are in EMR programs at about one-third less than would be expected but also found in

"gifted" programs by about one third of what would be expected from random program assignment.

When each of the 67 county school districts are examined individually, a clear and consistent pattern of concentration of Blacks is found in EMR classes, ranging from as little as 11 percent to as much as 563 percent more than the proportion of Blacks in the district overall. In 60 of the 67 Florida school districts, Black pupils constitute twice as large a proportion of the pupils in EMR classes as they are of the district total enrollment. In contrast, just as large a disproportionate concentration of Blacks is found in programs for the "gifted."

CONCLUSIONS

What kind of an equity rating should the states receive for their legislative reforms during the half decade since the Serrano mandate was issued in 1971? And how have poor and minority children fared in the wake of these reforms? The answers to these questions depend largely upon the standards of equity employed to evaluate the legislation in light of the reform goals. Furthermore, a fair evaluation of the reforms can only be made from data on their actual effects, not simply from what state funding formulas purport to do. The intent of this study was to evaluate the reforms and answer these questions particularly as they bear on the education of poor and minority children.

Equity Goals: Were they met?

Before drawing conclusions on the equity of school finance reform legislation of the 1970s, a couple of caveats are necessary to place these reforms in the larger perspective of the goals of the legislation. First, the goals of the legislation were not always equity goals; much of what was passed in the funding of public education, while having positive consequences for education finance reform, could not be construed as even remotely related to equity considerations.[17] Many of the persons in State departments of education responsible for administering the school finance systems recognized this and some even expressed wonder at our use of the term "reform." Second, the equity goals articulated by the proponents of these reforms were many, varied and sometimes contradictory in their consequences.

Equity goals differed according to the group affected, the resource to be distributed, and the principle used to determine an equitable distribution.[18]

Two groups have usually been identified as targets for equity, taxpayers and children. Taxpayers are the group for whom equity is sought in the fiscal neutrality reforms, guaranteeing equal dollars for equal effort. Children are the equity target in those reforms which seek equalization of expenditures per pupil or per unit of need.

An evaluation might focus on the distribution of current operating expenditures, total expenditures (including capital expenditures), revenues from various sources, educational resources (such as classroom size, certified instructional staff per 1,000 students), or actual services.

The equity principle used to evaluate a given distribution might be a horizontal or a vertical notion of equity. Horizontal equity requires that equals be treated equally; vertical equity recognizes group differences and suggests that unequals might be treated differently. Thus, for example, children with different needs might be allocated differing amounts of resources based on those needs and taxpayers unequal in ability to pay might be taxed accordingly.

Utilizing this framework, a multitude of equity goals might be identified. In our research, only three equity goals were considered as standards for evaluating the outcomes of the reforms.

The two most prominent equity goals adopted to guide the reforms of the 1970s were equalization of expenditures and

equalization of fiscal capacity to raise revenues for education. Expenditure equalization is in keeping with a "social equity" solution to reform such as full state funding; fiscal capacity equalization is what we refer to as a "fiscal neutrality" solution to reform, exemplified in power equalization formulas. Ironically, these solutions are not always compatible with one another. While the social equity approach insures equal expenditures, it does not allow for local choice of the level of spending. While the fiscal neutrality solution permits choice of spending level and equalizes the ability to raise revenues, it fosters variation in spending levels. Underlying both the social equity and fiscal neutrality approaches to reform is the concern expressed by the Serrano Court that expenditures not be a function of local school district wealth.

With regard to the first goal of reducing spending disparities, we found improvement in six of the seven cases we studied. The amount of reduction, however, was small in each case. Whether the disparities would have actually increased had the reforms not been enacted is hard to tell, but other studies on non-reform states seem to indicate that the reforms were largely responsible for declining spending disparities.[19]

The second goal of reducing wealth-related inequalities in revenues for education was only partially accomplished by the reforms. To a large extent, wealth discrimination was still very evident in all of the states after the reforms with the exception of New Mexico.

The third equity goal--less widely acclaimed in the reforms of the 1970s, but of central concern in this study--is equal

access to educational resources for pupils of different racial, ethnic and economic groups. This is a limited concept of equity since it is based on the notion of distributive justice, not on the educational needs of children. Such a notion of equity suggests that "legislative minorities"[20]--groups which historically have been discriminated against in the legislative process--should not be denied equal access to educational resources. While we recognize the legislative intent of these reforms was not explicitly to aid poor and minority students, nonetheless, we believe policy makers should be aware of the impact of the reforms on these groups. We found that racial and ethnic minorities did not always benefit from the reforms and sometimes they lost ground vis-a-vis non-minority pupils. Likewise, children from families with incomes below the poverty level benefitted in some cases and lost relative to nonpoor children in others. In short, we found the opportunity picture for poor and minority children to be a mixed one, requiring that each group be examined separately.

Generally, Blacks were located in districts above average in property wealth and expenditures. Reform did not change this picture overall; in some states (notably Colorado) Blacks gained, in others (California, for example) they lost. But the revenue picture for Blacks should be evaluated in terms of their locale and its characteristics. Blacks were found for the most part in large central city areas. To say that expenditures are higher for Blacks without taking into consideration the higher costs and needs is to distort the reality of the inferior quality of

educational services delivered to central city school districts. To say that Blacks are in districts with greater than average wealth ignores the true ability and willingness to pay in areas where commercial and industrial property are found and where other demands are placed on the municipal tax dollar. The influences of greater costs, educational needs and ability to pay on the educational dollar should be investigated systematically in future research.

Mexican American pupils were generally located in school districts of less than average property valuations and expenditures. Of course, there were differences in degree of ethnic-related disparities among the four Southwestern states we studied. The greatest fiscal disparities by percent Mexican American pupil concentration were found in Texas, where ethnic isolation by school district was generally very high and thus ethnic group differences could be clearly assessed on the district level of analysis. In 1975-76, districts in which almost all pupils (75-100%) were Mexican American were raising less than half (46%) of the amount of local revenue per pupil as districts of almost all (75-100%) non-Mexican American pupils. Located in relatively property-poor districts, the Mexican American pupils stood to benefit from the wealth-equalizing features of the Texas reform. But the new state aid formula did not sufficiently offset the local wealth disadvantage of Mexican Americans. The gap between districts of almost all Mexican American pupils and the districts of almost all non-Mexican American pupils was reduced very little by the reform (from $288 to $256 less per pupil).[21]

Hispanics in New Mexico moved from a disadvantaged position with respect to revenue for education before reform to a slightly advantaged position following the reform. The converse was true for Native Americans, who lost their revenue advantage following implementation of the reform.

Assessing the Impact of Funding Systems

Which type of funding arrangement tends to have the most beneficial effects with regard to the above-mentioned goals, and which has the least beneficial effects? This question is impossible to answer because no pure types of reforms have been enacted in any of the states. Attempts to place labels on particular funding systems are frustrated by the combinations of funding schemes, the adjustments for costs and needs, the differing measures of wealth, differences in pupil counting methods, save-harmless and phase-in provisions, and special allocations wrought through political compromise. We can only comment on reforms particular to the different states we studied and, with some caution, draw inferences from those states to others with funding systems which may be similar.

New Mexico clearly stood out with its virtual full-state-funding scheme as the "star" reform state with respect to both the goal of equalization of expenditures and the goal of wealth neutrality. Hispanic students seem to have benefitted from the new system, although Indian and poor pupils did not. But the trend toward equalization began before the 1974 reform was enacted in New Mexico, perhaps due to the high level of state support which existed in that state prior to reform.

Florida's high-level foundation program was also found to insure greater spending equalization and less wealth-related disparity than the other states. While minorities located in large urban districts (particularly Hispanics in Dade County) seemed to profit from the high-level weighted pupil approach to funding, the rural poor and Blacks did not seem to reap the benefits of the Florida reform.

The "power-equalizing" reforms of Michigan and Colorado seem to have reduced the amounts of spending and wealth-related disparities, but large disparities remain. Districts with large concentrations of Black and poor children improved relative to the average pupil, but districts with heavy concentrations of Mexican Americans lost in Colorado.

The foundation programs in California and Texas were the most disparate in regard to both spending and wealth-related inequalities, before and after reform. These disparities, however, were diminished to some extent by the reform. Blacks lost some of their relative revenue advantage in California unified districts, but districts with high concentrations of poor in California elementary districts (largely rural Southern California districts) lost some of their revenue disadvantage. Mexican American pupils benefitted from the reform in Texas, but remain the most disadvantaged of all groups in any of the states even after reform.

Citing these various changes should not obscure the overall picture, which is clearly one of no dramatic alteration of the status quo before reform. While the names of the funding systems

may have changed and the systems for distributing revenues may have taken on new formulations, the actual distributions of revenues were not very much more equitable by any of the equity standards as a result of the new legislation of the seventies. Other goals, such as increasing the level of educational funding, increasing the State's share of funding, and reducing tax burdens, seem to be more the products of the reforms than the achievement of pupil equity or fiscal neutrality.

Beyond Neutrality: A Goal for Future Reforms

It is clear from the results of our research that a reform aimed at wealth neutrality does not necessarily work to the advantage of poor and minority children. The fact that minority groups and the poor are distributed differently vis-a-vis district taxable wealth suggests that, as a single reform strategy, the fiscal neutrality approach adopted in the reforms of the 1970s will not benefit poor and minority group children everywhere. This study has dispelled the notion that poor and minority children are simply to be found in property-poor school districts.

The court and legislative battles for fiscal neutrality during the 1970s have indeed attacked one of the most egregious inequities that has for so long plagued the funding of education in the various states. Our society as a whole will benefit from a system which is more equal and less wealth-discriminating in the distribution of educational resources. But, poor and minority children would benefit more from a direct approach to addressing their educational needs. We recommend a goal for

future reforms in education finance which is based on the principle that strategies for reform should be tailor-made to the particular needs of disadvantaged groups. In future reforms, we should follow the lead of those states which have moved beyond equality, beyond neutrality, to a vertical concept of equity which suggests that unequals should be treated unequally, that is, in accordance with their educational needs.

Such a standard of equity would require adjustments in the funding system sufficient to meet the exceptional needs of "educationally disadvantaged" students.[22] This would necessitate further research (1) assessing the particular educational needs of the various pupil groups, (2) isolating experimentally the particular instructional approaches most effective in dealing with different pupil needs, (3) assessing the costs of those educational programs, and (4) determining appropriate funding systems which assure that adequate services are delivered to these various groups.

The question of whether minority and poor students are injured more by interdistrict or intradistrict inequalities has never been adequately explored in school finance research.[23] Our study uncovered far greater variation in both pupil characteristics and expenditures within districts than among districts in Florida. These findings underscore the importance of conducting future research on the school level of analysis if our concern is with pupil equity.

Of course, Florida is unique among the states in its school site approach to budgeting; in other states, the district is the fiscal accounting unit. Monitoring equity on the

school level may require that measures of actual resources and services be utilized in place of dollars per pupil. Thus, class size, teachers' post-graduate degrees and experience, and depth and breadth of curriculum may become the chief dependent variables in future equity research. Furthermore, educational resources and services are more suitable for equity monitoring among pupils in that they indicate more directly the quantity and quality of educational services provided. If we are to adopt a vertical notion of equity which addresses the educational needs of different pupil groups, it is clear that we must begin by turning our attention to the task of retooling our research instruments to more adequately measure differences in educational needs and costs.

FOOTNOTES

1. For a discussion of the various concepts of equity in education, see: Robert Brischetto and David Vaughan, Minorities, The Poor and School Finance Reform, Volume 1: An Impact Study of Six States, (San Antonio, Texas: Intercultural Development Research Association, NIE/HEW Contract 400-76-0136, 1979.)

2. The "social equity" approach takes its name from the purpose for which this type of reform was designed--to achieve equity among pupils. See: Robert W. Gilmer and Daniel Morgan, Jr., "State Grants-in-Aid to Education: The Two Alternatives," unpublished paper, the University of Texas at Austin, 1973. The social equity approach has also been referred to as the "fiscal outcomes" approach. See: Stephen J. Carroll, The Search for Equity in School Finance: Results from Fives States (Santa Monica, Calif: The Rand Corporation, NIE/HEW Contract R-2348-NIE, 1979). The "fiscal equity" approach to reform has been variously referred to as the "political economy" approach and the "fiscal opportunity" approach. (See: Gilmer and Morgan, ibid., and Carroll, ibid., respectively.)

3. Our analyses cover the period 1972-1976 and do not assess the most recent reform in California.

4. For evidence of their equivalence, see: Walter I. Garms, James W. Guthrie and Lawrence C. Pierce, School Finance: The Economics and Politics of Public Education, (Englewood Cliffs, New Jersey: Prentice-Hall, 1978), pp. 193-200.

5. This typology is designed to classify only the states we studied and is not exhaustive of all possibilities.

6. Most districts, however, have chosen the maximum allowable tax rate.

7. Given the shaky state of the art in determining pupil needs, no comparison can be made across states with respect to the goal of pupil equity. About the best that can be done is to assume equal needs for equal numbers of pupils and examine the changes in the distribution of revenues to see if districts with disproportionately large numbers of minority and poor children received relatively more revenues from the reform legislation.

8. For a discussion of the categorical programs enacted in SB 90 in California, see: Robert Singleton, Joseph O. Garcia and Ruben W. Espinosa, The Impact of California's 1972 School Finance Reform on Poor and Minority Children, Volume 3 of Robert Brischetto, gen. ed., Minorities, the Poor and School Finance Reform, San Antonio: Intercultural Development Research Association, 1979, pp. 11-12.

9. While excluding districts of less than 300 pupils resulted in the elimination of a large number of districts in some states, such as Michigan and Texas, the percent of all pupils excluded from the analyses was small--about 2 percent.

10. Only one year of data was available after the reform in Texas. Thus, changes presented in Table 1 for Texas are based on a one year time span, from 1974-75 to 1975-76.

11. John E. Coons, William H. Clune III, and Stephen D. Sugarman, Private Wealth and Public Education. (Cambridge, Mass.: The Belknap Press, 1970), p. 2.

12. This is done by weighting each district's average revenue per pupil by the number of members of each ethnic or income group and averaging across districts in that state.

13. For a discussion of the higher cost of education in cities, see: Betsy Levin, Thomas Muller and Corazon Sandoval, The High Cost of Education in Cities. (Washington, D.C.: The Urban Institute, 1973); John J. Callahan, William H. Wilken and M. Tracy Sillerman, Urban Schools and School Finance Reform: Promise and Reality (Washington, D.C.: The National Urban Coalition, 1973): Jose de la Isla, "The Financing of Education in Cities: Toward a Standard of Equity," paper at the Graduate School of Public Policy, University of California, Berkeley, n.d.

14. Garms found that needs (percentage of handicapped, bilingual and compensatory education pupils) and costs (percent of pupils in very small or very large districts) accounted for 38 percent of the variation in local-state revenue in New Mexico during 1974-75. See: Walter I. Garms, "Measuring the Equity of School Finance Systems," Report to the National Institute of Education, D-HEW, Grant No. 400-77-0085, December, 1978.

15. The "ecological fallacy" is the error of interpretation committed when inferences are drawn about individuals (in this case, pupils) from data collected on aggregates or areas. For a discussion of this problem, see: W. S. Robinson, "Ecological Correlations and the Behavior of Individuals," American Sociological Review 15 (June, 1950): 351-357.

16. "Overrepresented" and "underrepresented" refer to the proportion of pupils of a racial or ethnic minority group in a particular program category relative to the proportion that group constitutes of the total school enrollment. We cannot make a judgment from the data we gathered as to whether or not the over- or underrepresentation of a particular group is educationally appropriate.

17. One such non-equity goal would be the provision of adequate educational funding.

18. The framework and the discussion which follows is based on: Allan Odden, Robert Berne and Leanna Stiefel, Equity in School Finance, (Report No. 79-9 (Denver: Education Commission of the States, 1979), pp.7-17.

19. For evidence in non-reform states, see: Lawrence L. Brown III, Alan L. Ginsburg, J. Neil Killalea, Richard A. Rosthal and Esther O. Tron, "School Finance Reform in the Seventies: Achievements and Failures," Technical Analysis Paper, Office of the Asst. Secretary for Planning & Evaluation, U.S. Dept. HEW and Killalea Associates, Washington, D.C., Sept. 30, 1977. Nancy B. Dearman and Valena White Plisko, The Condition of Education, 1979, Washington, D.C.: U.S. Government Printing Office, 1979.

20. The term "legislative minority" is taken from William H. Clune, III, to refer to groups "recognized by the Court as requiring special judicial protection because of their vulnerability in the political process." See: Willima H. Clune, III, "Wealth Discrimination in School Finance," Northwestern University Law Review, 68, (Sept.-Oct., 1973): pp. 653-654.

21. See: Robert Brischetto, Minorities, The Poor and School Finance Reform, Vol. 2. The Impact of Texas' 1975 School Finance Reform on Poor and Minority Children. San Antonio, Texas: Intercultural Development Research Association, 1979.

22. We have avoided throughout this study the use of the term "disadvantaged" to refer to poor and minority children. This should not imply that we do not believe these students do not suffer disadvantages as a result of their minority group and class status in society; rather, we feel that the term has become charged with other meanings, particularly the view that lower-class and minority children come to school with a background which makes it more difficult for them to learn in school than the average child. One might instead view the school as offering a learning environment which is inappropriate to the experiences of these children.

23. This point was raised by Meyer Weinberg, Minority Students: A Research Appraisal, Washington, D.C.: U.S. Government Printing Office, 1977, p. 330.

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